
Appendix C Air Calculation Worksheets

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Vol1
 Project Name: D20950.01 Santa Ana MU Overlay Construction
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 ***							
TOTALS (lbs/day, unmitigated)	54.58	347.70	454.54	0.09	63.70	13.67	50.03
TOTALS (lbs/day, mitigated)	54.58	347.70	454.54	0.09	46.70	13.67	33.03
*** 2008 ***							
TOTALS (lbs/day, unmitigated)	1,433.85	487.73	693.42	0.00	17.60	17.04	0.56
TOTALS (lbs/day, mitigated)	1,433.85	487.73	693.42	0.00	17.60	17.04	0.56
*** 2009 ***							
TOTALS (lbs/day, unmitigated)	53.82	319.26	457.48	0.00	10.59	10.32	0.27
TOTALS (lbs/day, mitigated)	53.82	319.26	457.48	0.00	10.59	10.32	0.27

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Vol1
 Project Name: D20950.01 Santa Ana MU Overlay Construction
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 ***							
TOTALS (lbs/day, unmitigated)	54.58	347.70	454.54	0.09	63.70	13.67	50.03
TOTALS (lbs/day, mitigated)	54.58	347.70	454.54	0.09	46.70	13.67	33.03
*** 2008 ***							
TOTALS (lbs/day, unmitigated)	1,433.85	487.73	693.42	0.00	17.60	17.04	0.56
TOTALS (lbs/day, mitigated)	1,433.85	487.73	693.42	0.00	17.60	17.04	0.56
*** 2009 ***							
TOTALS (lbs/day, unmitigated)	53.82	319.26	457.48	0.00	10.59	10.32	0.27
TOTALS (lbs/day, mitigated)	53.82	319.26	457.48	0.00	10.59	10.32	0.27

URBEMIS 2002 For Windows 8.7.0

File Name: F:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Volu
 Project Name: D20950.01 Santa Ana MU Overlay Construction
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 ***							
TOTALS (tpy, unmitigated)	1.70	11.32	14.08	0.00	1.69	0.43	1.26
TOTALS (tpy, mitigated)	1.70	11.32	14.08	0.00	1.32	0.43	0.89
					PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2008 ***							
TOTALS (tpy, unmitigated)	22.31	44.94	62.76	0.00	1.64	1.60	0.04
TOTALS (tpy, mitigated)	22.31	44.94	62.76	0.00	1.64	1.60	0.04
					PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2009 ***							
TOTALS (tpy, unmitigated)	0.59	3.51	5.03	0.00	0.11	0.11	0.00
TOTALS (tpy, mitigated)	0.59	3.51	5.03	0.00	0.11	0.11	0.00

URBEMIS 2002 For Windows 8.7.0

File Name: F:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Volu
 Project Name: D20950.01 Santa Ana MU Overlay Construction
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

Construction Start Month and Year: October, 2007
 Construction Duration: 18
 Total Land Use Area to be Developed: 15 acres
 Maximum Acreage Disturbed Per Day: 5 acres
 Single Family Units: 0 Multi-Family Units: 500
 Retail/Office/Institutional/Industrial Square Footage: 230000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	14.31	-	14.31
Off-Road Diesel	43.35	282.96	355.62	-	11.20	11.20	0.00
On-Road Diesel	2.24	49.56	8.35	0.09	1.15	0.95	0.20
Worker Trips	0.28	0.73	7.16	0.00	0.04	0.01	0.03
Maximum lbs/day	45.87	333.25	371.13	0.09	26.70	12.16	14.54
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	50.00	-	50.00
Off-Road Diesel	54.40	347.60	452.39	-	13.67	13.67	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.18	0.10	2.15	0.00	0.03	0.00	0.03
Maximum lbs/day	54.58	347.70	454.54	0.00	63.70	13.67	50.03
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	54.58	347.70	454.54	0.09	63.70	13.67	50.03
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	52.54	326.45	439.10	-	11.70	11.70	0.00
Bldg Const Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	1,351.76	-	-	-	-	-	-
Arch Coatings Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Asphalt Off-Gas	0.60	-	-	-	-	-	-
Asphalt Off-Road Diesel	25.94	157.42	218.35	-	5.26	5.26	0.00
Asphalt On-Road Diesel	0.12	2.19	0.42	0.00	0.05	0.05	0.00
Asphalt Worker Trips	0.10	0.06	1.20	0.00	0.02	0.00	0.02
Maximum lbs/day	1,433.85	487.73	693.42	0.00	17.60	17.04	0.56
Max lbs/day all phases	1,433.85	487.73	693.42	0.00	17.60	17.04	0.56
*** 2009***							

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	52.54	318.52	441.64	-	10.31	10.31	0.00
Bldg Const Worker Trips	1.27	0.74	15.84	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	53.82	319.26	457.48	0.00	10.59	10.32	0.27
Max lbs/day all phases	53.82	319.26	457.48	0.00	10.59	10.32	0.27

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction (ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)

Phase 1 - Demolition Assumptions

Start Month/Year for Phase 1: Oct '07

Phase 1 Duration: 1 months

Building Volume Total (cubic feet): 750000

Building Volume Daily (cubic feet): 34080

On-Road Truck Travel (VMT): 1893

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
2	Cranes	190	0.430	8.0
2	Crushing/Processing Equip	154	0.780	8.0
8	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	4.0
5	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions

Start Month/Year for Phase 2: Nov '07

Phase 2 Duration: 2 months

On-Road Truck Travel (VMT): 0

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Excavators	180	0.580	8.0
6	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
5	Scrapers	313	0.660	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jan '08

Phase 3 Duration: 15 months

Start Month/Year for SubPhase Building: Jan '08

SubPhase Building Duration: 13 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Cranes	190	0.430	8.0
10	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
4	Rough Terrain Forklifts	94	0.475	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '08

SubPhase Architectural Coatings Duration: 1 months

Start Month/Year for SubPhase Asphalt: Dec '08

SubPhase Asphalt Duration: 1 months

Acres to be Paved: 5

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Off Highway Trucks	417	0.490	8.0
2	Other Equipment	190	0.620	5.0
4	Pavers	132	0.590	8.0
4	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
has been changed from off to on.

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 Project Name: D20950.01 Santa Ana MU Overlay Construction
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: October, 2007
 Construction Duration: 18
 Total Land Use Area to be Developed: 15 acres
 Maximum Acreage Disturbed Per Day: 5 acres
 Single Family Units: 0 Multi-Family Units: 500
 Retail/Office/Institutional/Industrial Square Footage: 230000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	14.31	-	14.31
Off-Road Diesel	43.35	282.96	355.62	-	11.20	11.20	0.00
On-Road Diesel	2.24	49.56	8.35	0.09	1.15	0.95	0.20
Worker Trips	0.28	0.73	7.16	0.00	0.04	0.01	0.03
Maximum lbs/day	45.87	333.25	371.13	0.09	26.70	12.16	14.54
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	50.00	-	50.00
Off-Road Diesel	54.40	347.60	452.39	-	13.67	13.67	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.18	0.10	2.15	0.00	0.03	0.00	0.03
Maximum lbs/day	54.58	347.70	454.54	0.00	63.70	13.67	50.03
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	54.58	347.70	454.54	0.09	63.70	13.67	50.03
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	52.54	326.45	439.10	-	11.70	11.70	0.00
Bldg Const Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	1,351.76	-	-	-	-	-	-
Arch Coatings Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Asphalt Off-Gas	0.60	-	-	-	-	-	-
Asphalt Off-Road Diesel	25.94	157.42	218.35	-	5.26	5.26	0.00
Asphalt On-Road Diesel	0.12	2.19	0.42	0.00	0.05	0.05	0.00
Asphalt Worker Trips	0.10	0.06	1.20	0.00	0.02	0.00	0.02
Maximum lbs/day	1,433.85	487.73	693.42	0.00	17.60	17.04	0.56
Max lbs/day all phases	1,433.85	487.73	693.42	0.00	17.60	17.04	0.56
*** 2009***							

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	52.54	318.52	441.64	-	10.31	10.31	0.00
Bldg Const Worker Trips	1.27	0.74	15.84	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	53.82	319.26	457.48	0.00	10.59	10.32	0.27
Max lbs/day all phases	53.82	319.26	457.48	0.00	10.59	10.32	0.27

Phase 1 - Demolition Assumptions

Start Month/Year for Phase 1: Oct '07
 Phase 1 Duration: 1 months
 Building Volume Total (cubic feet): 750000
 Building Volume Daily (cubic feet): 34080
 On-Road Truck Travel (VMT): 1893

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
2	Cranes	190	0.430	8.0
2	Crushing/Processing Equip	154	0.780	8.0
8	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	4.0
5	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions

Start Month/Year for Phase 2: Nov '07
 Phase 2 Duration: 2 months
 On-Road Truck Travel (VMT): 0

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Excavators	180	0.580	8.0
6	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
5	Scrapers	313	0.660	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jan '08
 Phase 3 Duration: 15 months
 Start Month/Year for SubPhase Building: Jan '08

SubPhase Building Duration: 13 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Cranes	190	0.430	8.0
10	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
4	Rough Terrain Forklifts	94	0.475	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '08

SubPhase Architectural Coatings Duration: 1 months

Start Month/Year for SubPhase Asphalt: Dec '08

SubPhase Asphalt Duration: 1 months

Acres to be Paved: 5

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Off Highway Trucks	417	0.490	8.0
2	Other Equipment	190	0.620	5.0
4	Pavers	132	0.590	8.0

Source	ROG	Nox	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)							
*** 2007***							
Phase 1 - Demolition Emissions	-	-	-	-	14.31	-	14.31
Fugitive Dust	-	-	-	-	11.20	11.20	0.00
Off-Road Diesel	43.35	282.96	355.62	-	11.20	11.20	0.00
On-Road Diesel	2.24	49.56	8.35	0.09	1.15	0.95	0.20
Worker Trips	0.28	0.73	7.16	0.00	0.04	0.01	0.03
Maximum lbs/day	45.87	333.25	371.13	0.09	26.70	12.16	14.54
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	33.00	-	33.00
Off-Road Diesel	54.40	347.60	452.39	-	13.67	13.67	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.18	0.10	2.15	0.00	0.03	0.00	0.03
Maximum lbs/day	54.58	347.70	454.54	0.00	46.70	13.67	33.03
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	54.58	347.70	454.54	0.09	46.70	13.67	33.03
*** 2008***							
Phase 1 - Demolition Emissions	-	-	-	-	0.00	-	0.00
Fugitive Dust	-	-	-	-	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	52.54	326.45	439.10	-	11.70	11.70	0.00
Bldg Const Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	1,351.76	-	-	-	-	-	-
Arch Coatings Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Asphalt Off-Gas	0.60	-	-	-	-	-	-
Asphalt Off-Road Diesel	25.94	157.42	218.35	-	5.26	5.26	0.00
Asphalt On-Road Diesel	0.12	2.19	0.42	0.00	0.05	0.05	0.00
Asphalt Worker Trips	0.10	0.06	1.20	0.00	0.02	0.00	0.02
Maximum lbs/day	1,433.85	487.73	693.42	0.00	17.60	17.04	0.56
Max lbs/day all phases	1,433.85	487.73	693.42	0.00	17.60	17.04	0.56
*** 2009***							
Phase 1 - Demolition Emissions	-	-	-	-	0.00	-	0.00
Fugitive Dust	-	-	-	-	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source	ROG	Nox	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	52.54	318.52	441.64	-	10.31	10.31	0.00
Bldg Const Worker Trips	1.27	0.74	15.84	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	53.82	319.26	457.48	0.00	10.59	10.32	0.27
Max lbs/day all phases	53.82	319.26	457.48	0.00	10.59	10.32	0.27

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)

Phase 1 - Demolition Assumptions

Start Month/Year for Phase 1: Oct '07

Phase 1 Duration: 1 months

Building Volume Total (cubic feet): 750000

Building Volume Daily (cubic feet): 34080

On-Road Truck Travel (VMT): 1893

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
2	Cranes	190	0.430	8.0
2	Crushing/Processing Equip	154	0.780	8.0
8	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	4.0
5	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions

Start Month/Year for Phase 2: Nov '07

Phase 2 Duration: 2 months

On-Road Truck Travel (VMT): 0

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Excavators	180	0.580	8.0
6	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
5	Scrapers	313	0.660	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jan '08

Phase 3 Duration: 15 months

Start Month/Year for SubPhase Building: Jan '08

SubPhase Building Duration: 13 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Cranes	190	0.430	8.0
10	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
4	Rough Terrain Forklifts	94	0.475	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '08

SubPhase Architectural Coatings Duration: 1 months

Start Month/Year for SubPhase Asphalt: Dec '08

SubPhase Asphalt Duration: 1 months

Acres to be Paved: 5

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Off Highway Trucks	417	0.490	8.0
2	Other Equipment	190	0.620	5.0
4	Pavers	132	0.590	8.0
4	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Vol1
Project Name: D20950.01 Santa Ana MU Overlay Construction
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Tons/Year)

Construction Start Month and Year: October, 2007
Construction Duration: 18
Total Land Use Area to be Developed: 15 acres
Maximum Acreage Disturbed Per Day: 5 acres
Single Family Units: 0 Multi-Family Units: 500
Retail/Office/Institutional/Industrial Square Footage: 230000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (tons/year)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.16	-	0.16
Off-Road Diesel	0.48	3.11	3.91	-	0.12	0.12	0.00
On-Road Diesel	0.02	0.55	0.09	0.00	0.01	0.01	0.00
Worker Trips	0.00	0.01	0.08	0.00	0.00	0.00	0.00
Total tons/year	0.50	3.67	4.08	0.00	0.29	0.13	0.16
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	1.10	-	1.10
Off-Road Diesel	1.20	7.65	9.95	-	0.30	0.30	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Total tons/year	1.20	7.65	10.00	0.00	1.40	0.30	1.10
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total all phases tons/yr	1.70	11.32	14.08	0.00	1.69	0.43	1.26
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.94	43.09	57.96	-	1.54	1.54	0.00
Bldg Const Worker Trips	0.18	0.09	2.20	0.00	0.04	0.00	0.04
Arch Coatings Off-Gas	14.87	-	-	-	-	-	-
Arch Coatings Worker Trips	0.02	0.01	0.19	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.01	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.29	1.73	2.40	-	0.06	0.06	0.00
Asphalt On-Road Diesel	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Total tons/year	22.31	44.94	62.76	0.00	1.64	1.60	0.04
Total all phases tons/yr	22.31	44.94	62.76	0.00	1.64	1.60	0.04
*** 2009***							

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.58	3.50	4.86	-	0.11	0.11	0.00
Bldg Const Worker Trips	0.01	0.01	0.17	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.59	3.51	5.03	0.00	0.11	0.11	0.00
Total all phases tons/yr							
	0.59	3.51	5.03	0.00	0.11	0.11	0.00

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction (ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)

Phase 1 - Demolition Assumptions

Start Month/Year for Phase 1: Oct '07

Phase 1 Duration: 1 months

Building Volume Total (cubic feet): 750000

Building Volume Daily (cubic feet): 34080

On-Road Truck Travel (VMT): 1893

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
2	Cranes	190	0.430	8.0
2	Crushing/Processing Equip	154	0.780	8.0
8	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	4.0
5	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions

Start Month/Year for Phase 2: Nov '07

Phase 2 Duration: 2 months

On-Road Truck Travel (VMT): 0

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Excavators	180	0.580	8.0
6	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
5	Scrapers	313	0.660	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jan '08

Phase 3 Duration: 15 months

Start Month/Year for SubPhase Building: Jan '08

SubPhase Building Duration: 13 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Cranes	190	0.430	8.0
10	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
4	Rough Terrain Forklifts	94	0.475	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '08

SubPhase Architectural Coatings Duration: 1 months

Start Month/Year for SubPhase Asphalt: Dec '08

SubPhase Asphalt Duration: 1 months

Acres to be Paved: 5

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Off Highway Trucks	417	0.490	8.0
2	Other Equipment	190	0.620	5.0
4	Pavers	132	0.590	8.0
4	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00+D20950.01 Santa Ana Metro East MU\Air Quality\Vol
 Project Name: D20950.01 Santa Ana MU Overlay Construction with low-VOC paint
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 ***							
TOTALS (lbs/day, unmitigated)	54.58	347.70	454.54	0.09	63.70	13.67	50.03
TOTALS (lbs/day, mitigated)	54.58	347.70	454.54	0.09	46.70	13.67	33.03
*** 2008 ***							
TOTALS (lbs/day, unmitigated)	564.34	487.73	693.42	0.00	17.60	17.04	0.56
TOTALS (lbs/day, mitigated)	564.34	487.73	693.42	0.00	17.60	17.04	0.56
*** 2009 ***							
TOTALS (lbs/day, unmitigated)	53.82	319.26	457.48	0.00	10.59	10.32	0.27
TOTALS (lbs/day, mitigated)	53.82	319.26	457.48	0.00	10.59	10.32	0.27

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00+D20950.01 Santa Ana Metro East MU\Air Quality\Vol
 Project Name: D20950.01 Santa Ana MU Overlay Construction with low-VOC paint
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 ***							
TOTALS (lbs/day, unmitigated)	54.58	347.70	454.54	0.09	63.70	13.67	50.03
TOTALS (lbs/day, mitigated)	54.58	347.70	454.54	0.09	46.70	13.67	33.03
*** 2008 ***							
TOTALS (lbs/day, unmitigated)	564.34	487.73	693.42	0.00	17.60	17.04	0.56
TOTALS (lbs/day, mitigated)	564.34	487.73	693.42	0.00	17.60	17.04	0.56
*** 2009 ***							
TOTALS (lbs/day, unmitigated)	53.82	319.26	457.48	0.00	10.59	10.32	0.27
TOTALS (lbs/day, mitigated)	53.82	319.26	457.48	0.00	10.59	10.32	0.27

URBEMIS 2002 For Windows 8.7.0

File Name: F:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Volu
 Project Name: D20950.01 Santa Ana MU Overlay Construction with low-VOC paint
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007 ***							
TOTALS (tpy, unmitigated)	1.70	11.32	14.08	0.00	1.69	0.43	1.26
TOTALS (tpy, mitigated)	1.70	11.32	14.08	0.00	1.32	0.43	0.89
*** 2008 ***							
TOTALS (tpy, unmitigated)	12.74	44.94	62.76	0.00	1.64	1.60	0.04
TOTALS (tpy, mitigated)	12.74	44.94	62.76	0.00	1.64	1.60	0.04
*** 2009 ***							
TOTALS (tpy, unmitigated)	0.59	3.51	5.03	0.00	0.11	0.11	0.00
TOTALS (tpy, mitigated)	0.59	3.51	5.03	0.00	0.11	0.11	0.00

URBEMIS 2002 For Windows 8.7.0

File Name: F:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Volu
 Project Name: D20950.01 Santa Ana MU Overlay Construction with low-VOC paint
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

Construction Start Month and Year: October, 2007
 Construction Duration: 18
 Total Land Use Area to be Developed: 15 acres
 Maximum Acreage Disturbed Per Day: 5 acres
 Single Family Units: 0 Multi-Family Units: 500
 Retail/Office/Institutional/Industrial Square Footage: 230000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	14.31	-	14.31
Off-Road Diesel	43.35	282.96	355.62	-	11.20	11.20	0.00
On-Road Diesel	2.24	49.56	8.35	0.09	1.15	0.95	0.20
Worker Trips	0.28	0.73	7.16	0.00	0.04	0.01	0.03
Maximum lbs/day	45.87	333.25	371.13	0.09	26.70	12.16	14.54
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	50.00	-	50.00
Off-Road Diesel	54.40	347.60	452.39	-	13.67	13.67	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.18	0.10	2.15	0.00	0.03	0.00	0.03
Maximum lbs/day	54.58	347.70	454.54	0.00	63.70	13.67	50.03
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	54.58	347.70	454.54	0.09	63.70	13.67	50.03
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	52.54	326.45	439.10	-	11.70	11.70	0.00
Bldg Const Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	482.25	-	-	-	-	-	-
Arch Coatings Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Asphalt Off-Gas	0.60	-	-	-	-	-	-
Asphalt Off-Road Diesel	25.94	157.42	218.35	-	5.26	5.26	0.00
Asphalt On-Road Diesel	0.12	2.19	0.42	0.00	0.05	0.05	0.00
Asphalt Worker Trips	0.10	0.06	1.20	0.00	0.02	0.00	0.02
Maximum lbs/day	564.34	487.73	693.42	0.00	17.60	17.04	0.56
Max lbs/day all phases	564.34	487.73	693.42	0.00	17.60	17.04	0.56
*** 2009***							

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	52.54	318.52	441.64	-	10.31	10.31	0.00
Bldg Const Worker Trips	1.27	0.74	15.84	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	53.82	319.26	457.48	0.00	10.59	10.32	0.27
Max lbs/day all phases	53.82	319.26	457.48	0.00	10.59	10.32	0.27

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction (ROG 0.0% NOX 0.0% CO 0.0% SO2 0.0% PM10 34.0%)

Phase 1 - Demolition Assumptions

Start Month/Year for Phase 1: Oct '07

Phase 1 Duration: 1 months

Building Volume Total (cubic feet): 750000

Building Volume Daily (cubic feet): 34080

On-Road Truck Travel (VMT): 1893

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
2	Cranes	190	0.430	8.0
2	Crushing/Processing Equip	154	0.780	8.0
8	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	4.0
5	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions

Start Month/Year for Phase 2: Nov '07

Phase 2 Duration: 2 months

On-Road Truck Travel (VMT): 0

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Excavators	180	0.580	8.0
6	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
5	Scrapers	313	0.660	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jan '08

Phase 3 Duration: 15 months

Start Month/Year for SubPhase Building: Jan '08

SubPhase Building Duration: 13 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Cranes	190	0.430	8.0
10	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
4	Rough Terrain Forklifts	94	0.475	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '08

SubPhase Architectural Coatings Duration: 1 months

Start Month/Year for SubPhase Asphalt: Dec '08

SubPhase Asphalt Duration: 1 months

Acres to be Paved: 5

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Off Highway Trucks	417	0.490	8.0
2	Other Equipment	190	0.620	5.0
4	Pavers	132	0.590	8.0
4	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths

Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0066

Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0066

Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Volu
 Project Name: D20950.01 Santa Ana MU Overlay Construction with low-VOC paint
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: October, 2007
 Construction Duration: 18
 Total Land Use Area to be Developed: 15 acres
 Maximum Acreage Disturbed Per Day: 5 acres
 Single Family Units: 0 Multi-Family Units: 500
 Retail/Office/Institutional/Industrial Square Footage: 230000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	14.31	-	14.31
Off-Road Diesel	43.35	282.96	355.62	-	11.20	11.20	0.00
On-Road Diesel	2.24	49.56	8.35	0.09	1.15	0.95	0.20
Worker Trips	0.28	0.73	7.16	0.00	0.04	0.01	0.03
Maximum lbs/day	45.87	333.25	371.13	0.09	26.70	12.16	14.54
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	50.00	-	50.00
Off-Road Diesel	54.40	347.60	452.39	-	13.67	13.67	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.18	0.10	2.15	0.00	0.03	0.00	0.03
Maximum lbs/day	54.58	347.70	454.54	0.00	63.70	13.67	50.03
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	54.58	347.70	454.54	0.09	63.70	13.67	50.03
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	52.54	326.45	439.10	-	11.70	11.70	0.00
Bldg Const Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	482.25	-	-	-	-	-	-
Arch Coatings Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Asphalt Off-Gas	0.60	-	-	-	-	-	-
Asphalt Off-Road Diesel	25.94	157.42	218.35	-	5.26	5.26	0.00
Asphalt On-Road Diesel	0.12	2.19	0.42	0.00	0.05	0.05	0.00
Asphalt Worker Trips	0.10	0.06	1.20	0.00	0.02	0.00	0.02
Maximum lbs/day	564.34	487.73	693.42	0.00	17.60	17.04	0.56
Max lbs/day all phases	564.34	487.73	693.42	0.00	17.60	17.04	0.56
*** 2009***							

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	52.54	318.52	441.64	-	10.31	10.31	0.00
Bldg Const Worker Trips	1.27	0.74	15.84	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	53.82	319.26	457.48	0.00	10.59	10.32	0.27
Max lbs/day all phases	53.82	319.26	457.48	0.00	10.59	10.32	0.27

Phase 1 - Demolition Assumptions

Start Month/Year for Phase 1: Oct '07

Phase 1 Duration: 1 months

Building Volume Total (cubic feet): 750000

Building Volume Daily (cubic feet): 34080

On-Road Truck Travel (VMT): 1893

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
2	Cranes	190	0.430	8.0
2	Crushing/Processing Equip	154	0.780	8.0
8	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	4.0
5	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions

Start Month/Year for Phase 2: Nov '07

Phase 2 Duration: 2 months

On-Road Truck Travel (VMT): 0

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Excavators	180	0.580	8.0
6	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
5	Scrapers	313	0.660	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jan '08

Phase 3 Duration: 15 months

Start Month/Year for SubPhase Building: Jan '08

SubPhase Building Duration: 13 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Cranes	190	0.430	8.0
10	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
4	Rough Terrain Forklifts	94	0.475	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '08

SubPhase Architectural Coatings Duration: 1 months

Start Month/Year for SubPhase Asphalt: Dec '08

SubPhase Asphalt Duration: 1 months

Acres to be Paved: 5

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Off Highway Trucks	417	0.490	8.0
2	Other Equipment	190	0.620	5.0
4	Pavers	132	0.590	8.0

Source	ROG	Nox	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
4 Rollers 114 0.430 8.0							
CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)							
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	14.31	-	14.31
Off-Road Diesel	43.35	282.96	355.62	-	11.20	11.20	0.00
On-Road Diesel	2.24	49.56	8.35	0.09	1.15	0.95	0.20
Worker Trips	0.28	0.73	7.16	0.00	0.04	0.01	0.03
Maximum lbs/day	45.87	333.25	371.13	0.09	26.70	12.16	14.54
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	33.00	-	33.00
Off-Road Diesel	54.40	347.60	452.39	-	13.67	13.67	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.18	0.10	2.15	0.00	0.03	0.00	0.03
Maximum lbs/day	54.58	347.70	454.54	0.00	46.70	13.67	33.03
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max lbs/day all phases	54.58	347.70	454.54	0.09	46.70	13.67	33.03
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	52.54	326.45	439.10	-	11.70	11.70	0.00
Bldg Const Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	482.25	-	-	-	-	-	-
Arch Coatings Worker Trips	1.40	0.81	17.17	0.00	0.29	0.02	0.27
Asphalt Off-Gas	0.60	-	-	-	-	-	-
Asphalt Off-Road Diesel	25.94	157.42	218.35	-	5.26	5.26	0.00
Asphalt On-Road Diesel	0.12	2.19	0.42	0.00	0.05	0.05	0.00
Asphalt Worker Trips	0.10	0.06	1.20	0.00	0.02	0.00	0.02
Maximum lbs/day	564.34	487.73	693.42	0.00	17.60	17.04	0.56
Max lbs/day all phases	564.34	487.73	693.42	0.00	17.60	17.04	0.56
*** 2009***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source	ROG	Nox	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	52.54	318.52	441.64	-	10.31	10.31	0.00
Bldg Const Worker Trips	1.27	0.74	15.84	0.00	0.29	0.02	0.27
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	53.82	319.26	457.48	0.00	10.59	10.32	0.27
Max lbs/day all phases	53.82	319.26	457.48	0.00	10.59	10.32	0.27

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)

Phase 1 - Demolition Assumptions

Start Month/Year for Phase 1: Oct '07

Phase 1 Duration: 1 months

Building Volume Total (cubic feet): 750000

Building Volume Daily (cubic feet): 34080

On-Road Truck Travel (VMT): 1893

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
2	Cranes	190	0.430	8.0
2	Crushing/Processing Equip	154	0.780	8.0
8	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	4.0
5	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions

Start Month/Year for Phase 2: Nov '07

Phase 2 Duration: 2 months

On-Road Truck Travel (VMT): 0

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Excavators	180	0.580	8.0
6	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
5	Scrapers	313	0.660	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Jan '08

Phase 3 Duration: 15 months

Start Month/Year for SubPhase Building: Jan '08

SubPhase Building Duration: 13 months

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Cranes	190	0.430	8.0
10	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
4	Rough Terrain Forklifts	94	0.475	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '08

SubPhase Architectural Coatings Duration: 1 months

Start Month/Year for SubPhase Asphalt: Dec '08

SubPhase Asphalt Duration: 1 months

Acres to be Paved: 5

Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
4	Off Highway Trucks	417	0.490	8.0
2	Other Equipment	190	0.620	5.0
4	Pavers	132	0.590	8.0
4	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
 Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0066
 Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0066
 Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
 has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Vol1
 Project Name: D20950.01 Santa Ana MU Overlay Construction with low-VOC paint
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Tons/Year)

Construction Start Month and Year: October, 2007
 Construction Duration: 18
 Total Land Use Area to be Developed: 15 acres
 Maximum Acreage Disturbed Per Day: 5 acres
 Single Family Units: 0 Multi-Family Units: 500
 Retail/Office/Institutional/Industrial Square Footage: 230000

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (tons/year)							
Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.16	-	0.16
Off-Road Diesel	0.48	3.11	3.91	-	0.12	0.12	0.00
On-Road Diesel	0.02	0.55	0.09	0.00	0.01	0.01	0.00
Worker Trips	0.00	0.01	0.08	0.00	0.00	0.00	0.00
Total tons/year	0.50	3.67	4.08	0.00	0.29	0.13	0.16
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	1.10	-	1.10
Off-Road Diesel	1.20	7.65	9.95	-	0.30	0.30	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Total tons/year	1.20	7.65	10.00	0.00	1.40	0.30	1.10
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Bldg Const Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total all phases tons/yr	1.70	11.32	14.08	0.00	1.69	0.43	1.26
*** 2008***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.94	43.09	57.96	-	1.54	1.54	0.00
Bldg Const Worker Trips	0.18	0.09	2.20	0.00	0.04	0.00	0.04
Arch Coatings Off-Gas	5.30	-	-	-	-	-	-
Arch Coatings Worker Trips	0.02	0.01	0.19	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.01	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.29	1.73	2.40	-	0.06	0.06	0.00
Asphalt On-Road Diesel	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Total tons/year	12.74	44.94	62.76	0.00	1.64	1.60	0.04
Total all phases tons/yr	12.74	44.94	62.76	0.00	1.64	1.60	0.04
*** 2009***							

Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	0.58	3.50	4.86	-	0.11	0.11	0.00
Bldg Const Worker Trips	0.01	0.01	0.17	0.00	0.00	0.00	0.00
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons/year	0.59	3.51	5.03	0.00	0.11	0.11	0.00
Total all phases tons/yr							
	0.59	3.51	5.03	0.00	0.11	0.11	0.00

Construction-Related Mitigation Measures

Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)

Phase 1 - Demolition Assumptions
Start Month/Year for Phase 1: Oct '07
Phase 1 Duration: 1 months
Building Volume Total (cubic feet): 750000
Building Volume Daily (cubic feet): 34080
On-Road Truck Travel (VMT): 1893

Off-Road Equipment				
No.	Type	Horsepower	Load Factor	Hours/Day
1	Concrete/Industrial saws	84	0.730	8.0
2	Cranes	190	0.430	8.0
2	Crushing/Processing Equip	154	0.780	8.0
8	Off Highway Trucks	417	0.490	8.0
3	Other Equipment	190	0.620	4.0
5	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Nov '07
Phase 2 Duration: 2 months
On-Road Truck Travel (VMT): 0

Off-Road Equipment				
No.	Type	Horsepower	Load Factor	Hours/Day
3	Excavators	180	0.580	8.0
6	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
5	Scrapers	313	0.660	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Jan '08
Phase 3 Duration: 15 months
Start Month/Year for SubPhase Building: Jan '08
SubPhase Building Duration: 13 months

Off-Road Equipment				
No.	Type	Horsepower	Load Factor	Hours/Day
3	Cranes	190	0.430	8.0
10	Off Highway Trucks	417	0.490	8.0
4	Other Equipment	190	0.620	5.0
4	Rough Terrain Forklifts	94	0.475	8.0
6	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '08
SubPhase Architectural Coatings Duration: 1 months
Start Month/Year for SubPhase Asphalt: Dec '08
SubPhase Asphalt Duration: 1 months
Acres to be Paved: 5

Off-Road Equipment				
No.	Type	Horsepower	Load Factor	Hours/Day
4	Off Highway Trucks	417	0.490	8.0
2	Other Equipment	190	0.620	5.0
4	Pavers	132	0.590	8.0
4	Rollers	114	0.430	8.0

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

The user has overridden the Default Phase Lengths
Architectural Coatings: # ROG/ft2 (residential) changed from 0.0185 to 0.0066
Architectural Coatings: # ROG/ft2 (non-res) changed from 0.0185 to 0.0066
Phase 2 mitigation measure Soil Disturbance: Water exposed surfaces - 2x daily
has been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00+D20950.01 Santa Ana Metro East MU\Air Quality\Volu
Project Name: D20950.01 Santa Ana MU Overlay Operation
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	395.28	62.72	37.67	0.00	0.12

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	169.55	133.96	1,661.45	4.54	774.49

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	564.83	196.68	1,699.12	4.54	774.61

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00+D20950.01 Santa Ana Metro East MU\Air Quality\Volu
Project Name: D20950.01 Santa Ana MU Overlay Operation
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	395.01	62.69	35.78	0.00	0.12

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	144.84	192.09	1,544.10	4.05	774.49

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day, unmitigated)	539.85	254.78	1,579.89	4.06	774.61

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00+D20950.01 Santa Ana Metro East MU\Air Quality\Volu
 Project Name: D20950.01 Santa Ana MU Overlay Operation
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES					
	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	65.75	11.44	6.70	0.00	0.02
OPERATIONAL (VEHICLE) EMISSION ESTIMATES					
	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	29.44	27.98	296.08	0.80	141.34
SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES					
	ROG	NOx	CO	SO2	PM10
TOTALS (tpy, unmitigated)	95.19	39.43	302.78	0.80	141.37

URBEMIS 2002 For Windows 8.7.0

File Name: P:\Projects - All Users\D20800.00+D20950.01 Santa Ana Metro East MU\Air Quality\Vol
 Project Name: D20950.01 Santa Ana MU Overlay Operation
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)					
Source	ROG	NOx	CO	SO2	PM10
Natural Gas	4.74	62.69	35.78	0	0.12
Hearth	0.00	0.00	0.00	0.00	0.00
Landscaping - No winter emissions					
Consumer Prdcts	264.18	-	-	-	-
Architectural Coatings	126.09	-	-	-	-
TOTALS (lbs/day, unmitigated)	395.01	62.69	35.78	0.00	0.12

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Apartments mid rise	61.00	77.18	634.15	1.69	314.33
Strip mall	72.57	100.02	792.10	2.05	398.98
General office building	11.27	14.89	117.85	0.32	61.18
TOTAL EMISSIONS (lbs/day)	144.84	192.09	1,544.10	4.05	774.49

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2030 Temperature (F): 50 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Apartments mid rise	142.11	5.76 trips/dwelling unit	5,400.0031	104.00
Strip mall		42.94 trips/1000 sq. ft.	1,100.0047	234.00
General office building		3.32 trips/1000 sq. ft.	1,700.00	5,644.00
		Sum of Total Trips		83,982.00
		Total Vehicle Miles Traveled		512,946.70

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	52.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.90	0.00	100.00	0.00
Light Truck 3,751- 5,750	16.70	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.60	0.00	100.00	0.00
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.70	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	33.30	66.70	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.60	0.00	92.30	7.70

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			

% of Trips - Commercial (by land use)

Strip mall	2.0	1.0	97.0
General office building	35.0	17.5	47.5

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The hearth option switch changed from on to off.
The landscape year changed from 2005 to 2020.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2030.

URBEMIS 2002 For Windows 8.7.0

File Name: F:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Volu
 Project Name: D20950.01 Santa Ana MU Overlay Operation
 Project Location: South Coast Air Basin (Los Angeles area)
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)	ROG	NOx	CO	SO2	PM10
Natural Gas	4.74	62.69	35.78	0	0.12
Hearth - No summer emissions					
Landscaping	0.27	0.03	1.89	0.00	0.00
Consumer Prdcts	264.18	-	-	-	-
Architectural Coatings	126.09	-	-	-	-
TOTALS (lbs/day, unmitigated)	395.28	62.72	37.67	0.00	0.12

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Apartments mid rise	79.75	53.73	691.90	1.90	314.33
Strip mall	71.96	69.89	839.54	2.28	398.98
General office building	17.84	10.34	130.01	0.35	61.18
TOTAL EMISSIONS (lbs/day)	169.55	133.96	1,661.45	4.54	774.49

Does not include correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2030 Temperature (F): 90 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Apartments mid rise	142.11	5.76 trips/dwelling unit	5,400.00	31,104.00
Strip mall		42.94 trips/1000 sq. ft.	1,100.00	47,234.00
General office building		3.32 trips/1000 sq. ft.	1,700.00	5,644.00
			Sum of Total Trips	83,982.00
			Total Vehicle Miles Traveled	512,946.70

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	52.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.90	0.00	100.00	0.00
Light Truck 3,751- 5,750	16.70	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.60	0.00	100.00	0.00
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.70	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	33.30	66.70	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.60	0.00	92.30	7.70

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
General office building				35.0	17.5	47.5

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The hearth option switch changed from on to off.
The landscape year changed from 2005 to 2020.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2030.

URBEMIS 2002 For Windows 8.7.0

File Name: F:\Projects - All Users\D20800.00\D20950.01 Santa Ana Metro East MU\Air Quality\Volu
Project Name: D20950.01 Santa Ana MU Overlay Operation
Project Location: South Coast Air Basin (Los Angeles area)
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Tons/Year)

AREA SOURCE EMISSION ESTIMATES (Tons per Year, Unmitigated)	ROG	NOx	CO	SO2	PM10
Source					
Natural Gas	0.87	11.44	6.53	0.00	0.02
Hearth	0.00	0.00	0.00	0.00	0.00
Landscaping	0.02	0.00	0.17	0.00	0.00
Consumer Prdcts	48.21	-	-	-	-
Architectural Coatings	16.64	-	-	-	-
TOTALS (tpy, unmitigated)	65.75	11.44	6.70	0.00	0.02

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Apartments mid rise	13.41	11.23	122.76	0.33	57.37
Strip mall	13.17	14.59	150.33	0.40	72.81
General office building	2.86	2.16	22.99	0.06	11.16
TOTAL EMISSIONS (tons/yr)	29.44	27.98	296.08	0.80	141.34

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2030 Season: Annual

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Apartments mid rise	142.11	5.76 trips/dwelling unit	5,400.00	31,104.00
Strip mall		42.94 trips/1000 sq. ft.	1,100.00	47,234.00
General office building		3.32 trips/1000 sq. ft.	1,700.00	5,644.00
Sum of Total Trips				83,982.00
Total Vehicle Miles Traveled				512,946.70

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	52.50	0.00	100.00	0.00
Light Truck < 3,750 lbs	15.90	0.00	100.00	0.00
Light Truck 3,751- 5,750	16.70	0.00	100.00	0.00
Med Truck 5,751- 8,500	7.60	0.00	100.00	0.00
Lite-Heavy 8,501-10,000	1.00	0.00	80.00	20.00
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.90	0.00	22.20	77.80
Heavy-Heavy 33,001-60,000	0.70	0.00	0.00	100.00
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.50	33.30	66.70	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	2.60	0.00	92.30	7.70

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35.0	40.0	40.0	40.0	40.0	40.0
% of Trips - Residential	20.0	37.0	43.0			

% of Trips - Commercial (by land use)

Strip mall	2.0	1.0	97.0
General office building	35.0	17.5	47.5

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Area

The hearth option switch changed from on to off.
The landscape year changed from 2005 to 2020.

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2030.

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

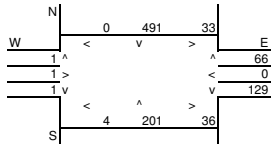
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

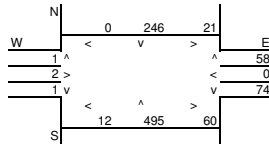
Intersection: Wellington Avenue and Cabrillo Park Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Cabrillo Park Drive	At Grade	6	15	15
East-West Roadway:	Wellington Avenue	At Grade	2	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	862	N-S Road:	888
E-W Road:	265	E-W Road:	215

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	862	7.55	0.40	0.32	0.23
East-West Road	2.7	2.2	1.7	265	7.55	0.05	0.04	0.03
P.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	888	7.55	0.41	0.33	0.23
East-West Road	2.7	2.2	1.7	215	7.55	0.04	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.5	6.5	4.5
50 Feet from Roadway Edge	6.4	6.4	4.4
100 Feet from Roadway Edge	6.3	6.3	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

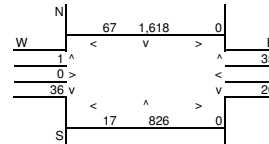
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

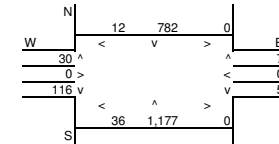
Intersection: Tustin Avenue and Sixth Street
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Tustin Avenue	At Grade	8	15	15
East-West Roadway:	Sixth Street	At Grade	2	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,547	N-S Road:	2,116
E-W Road:	122	E-W Road:	194

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	5.7	4.6	3.4	2,547	7.55	1.10	0.88	0.65
East-West Road	2.7	2.2	1.7	122	7.55	0.02	0.02	0.02
P.M. Peak Traffic Hour								
North-South Road	5.7	4.6	3.4	2,116	7.55	0.91	0.74	0.54
East-West Road	2.7	2.2	1.7	194	7.55	0.04	0.03	0.02

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.1	7.0	5.0
50 Feet from Roadway Edge	6.9	6.8	4.8
100 Feet from Roadway Edge	6.7	6.6	4.6

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

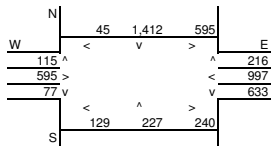
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

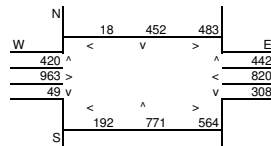
Intersection: Seventeenth Street and Tustin Avenue
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Tustin Avenue	8	15	15
East-West Roadway:	Seventeenth Street	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,718	N-S Road:	2,586
E-W Road:	3,276	E-W Road:	3,580

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	2,718	7.55	0.45	0.39	0.33
East-West Road	5.7	4.6	3.4	3,276	7.55	1.41	1.14	0.84
P.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	2,586	7.55	0.43	0.37	0.31
East-West Road	5.7	4.6	3.4	3,580	7.55	1.54	1.24	0.92

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).
² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	7.9	8.0	5.7
50 Feet from Roadway Edge	7.5	7.6	5.4
100 Feet from Roadway Edge	7.2	7.2	5.1

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

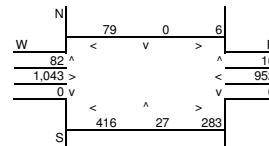
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

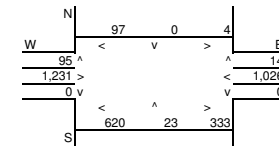
Intersection: Seventeenth Street and SR-55 Northbound Ramps
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	SR-55 Northbound Ramps	4	15	15
East-West Roadway:	Seventeenth Street	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	726	N-S Road:	976
E-W Road:	2,572	E-W Road:	3,069

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	726	7.55	0.14	0.12	0.09
East-West Road	5.7	4.6	3.4	2,572	7.55	1.11	0.89	0.66
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	976	7.55	0.19	0.16	0.13
East-West Road	5.7	4.6	3.4	3,069	7.55	1.32	1.07	0.79

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).
² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	7.2	7.5	5.3
50 Feet from Roadway Edge	7.0	7.2	5.1
100 Feet from Roadway Edge	6.8	6.9	4.8

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

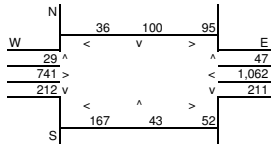
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

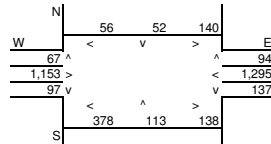
Intersection: Seventeenth Street and Cabrillo Park Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Seventeenth Street	At Grade	6	15	15
East-West Roadway:	Cabrillo Park Drive	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	785	N-S Road:	915
E-W Road:	2,247	E-W Road:	3,046

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	785	7.55	0.14	0.12	0.10
East-West Road	5.7	4.6	3.4	2,247	7.55	0.97	0.78	0.58
P.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	915	7.55	0.16	0.14	0.12
East-West Road	5.7	4.6	3.4	3,046	7.55	1.31	1.06	0.78

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.1	7.5	5.3
50 Feet from Roadway Edge	6.9	7.2	5.0
100 Feet from Roadway Edge	6.7	6.9	4.8

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

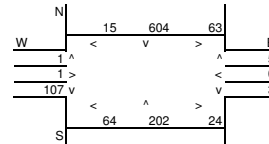
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

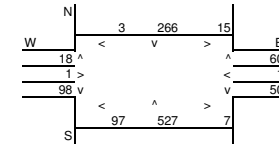
Intersection: Park Court Place and Cabrillo Park Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Cabrillo Park Drive	At Grade	6	15	15
East-West Roadway:	Park Court Place	At Grade	2	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,004	N-S Road:	1,045
E-W Road:	188	E-W Road:	218

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	1,004	7.55	0.46	0.37	0.27
East-West Road	2.7	2.2	1.7	188	7.55	0.04	0.03	0.02
P.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	1,045	7.55	0.48	0.39	0.28
East-West Road	2.7	2.2	1.7	218	7.55	0.04	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.5	6.5	4.5
50 Feet from Roadway Edge	6.4	6.4	4.4
100 Feet from Roadway Edge	6.3	6.3	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

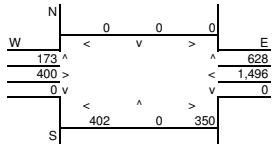
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

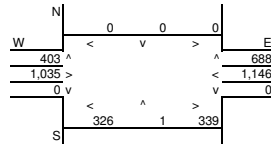
Intersection: Irvine Boulevard and SR-55 Northbound Ramps
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	SR-55 Northbound Ramps	At Grade	4	15	15
East-West Roadway:	Irvine Boulevard	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	801	N-S Road:	1,092
E-W Road:	2,874	E-W Road:	3,208

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	801	7.55	0.16	0.13	0.10
East-West Road	5.7	4.6	3.4	2,874	7.55	1.24	1.00	0.74
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,092	7.55	0.21	0.18	0.14
East-West Road	5.7	4.6	3.4	3,208	7.55	1.38	1.11	0.82

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.4	7.6	5.4
50 Feet from Roadway Edge	7.1	7.3	5.1
100 Feet from Roadway Edge	6.8	7.0	4.9

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

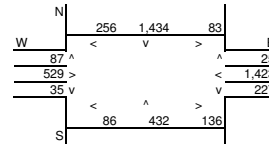
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

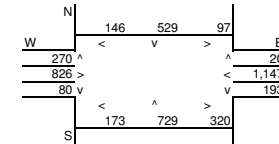
Intersection: Irvine Boulevard and Newport Boulevard
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Newport Boulevard	At Grade	8	15	15
East-West Roadway:	Irvine Boulevard	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,350	N-S Road:	2,024
E-W Road:	2,423	E-W Road:	2,642

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	2,350	7.55	0.39	0.34	0.28
East-West Road	5.7	4.6	3.4	2,423	7.55	1.04	0.84	0.62
P.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	2,024	7.55	0.34	0.29	0.24
East-West Road	5.7	4.6	3.4	2,642	7.55	1.14	0.92	0.68

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.4	7.5	5.3
50 Feet from Roadway Edge	7.2	7.2	5.1
100 Feet from Roadway Edge	6.9	6.9	4.8

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

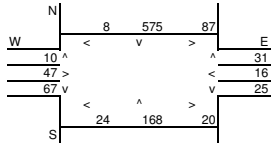
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

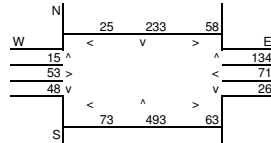
Intersection: Fruit Street and Cabrillo Park Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Cabrillo Park Drive	6	15	15
East-West Roadway:	Fruit Street	2	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	879	N-S Road:	958
E-W Road:	226	E-W Road:	405

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	879	7.55	0.40	0.33	0.23
East-West Road	2.7	2.2	1.7	226	7.55	0.05	0.04	0.03
P.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	958	7.55	0.44	0.35	0.25
East-West Road	2.7	2.2	1.7	405	7.55	0.08	0.07	0.05

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.5	6.5	4.5
50 Feet from Roadway Edge	6.4	6.4	4.4
100 Feet from Roadway Edge	6.3	6.3	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

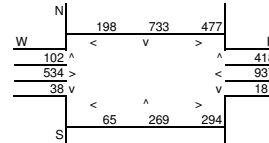
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

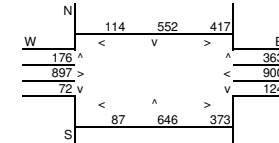
Intersection: Fourth Street and Tustin Avenue
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Tustin Avenue	8	15	15
East-West Roadway:	Fourth Street	2	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,197	N-S Road:	2,268
E-W Road:	2,841	E-W Road:	3,074

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	2,197	7.55	0.37	0.32	0.27
East-West Road	5.7	4.6	3.4	2,841	7.55	1.22	0.99	0.73
P.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	2,268	7.55	0.38	0.33	0.27
East-West Road	5.7	4.6	3.4	3,074	7.55	1.32	1.07	0.79

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.6	7.7	5.5
50 Feet from Roadway Edge	7.3	7.4	5.2
100 Feet from Roadway Edge	7.0	7.1	4.9

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
 Project Title: Santa Ana MU Overlay

Background Information

Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
 Background 1-hour CO Concentration (ppm): 6.0
 Background 8-hour CO Concentration (ppm): 4.1
 Persistence Factor: 0.8
 Analysis Year: 2006

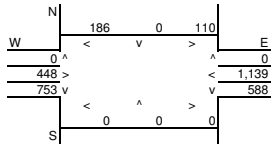
Roadway Data

Intersection: Fourth Street and SR-55 Southbound Ramps
 Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	SR-55 Southbound Ramps	4	15	15
East-West Roadway:	Fourth Street	8	15	15

A.M. Peak Hour Traffic Volumes

P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,341	N-S Road:	1,010
E-W Road:	2,526	E-W Road:	3,064

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,341	7.55	0.26	0.22	0.17
East-West Road	5.7	4.6	3.4	2,526	7.55	1.09	0.88	0.65
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,010	7.55	0.20	0.17	0.13
East-West Road	5.7	4.6	3.4	3,064	7.55	1.32	1.06	0.79

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.4	7.5	5.3
50 Feet from Roadway Edge	7.1	7.2	5.1
100 Feet from Roadway Edge	6.8	6.9	4.8

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
 Project Title: Santa Ana MU Overlay

Background Information

Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
 Background 1-hour CO Concentration (ppm): 6.0
 Background 8-hour CO Concentration (ppm): 4.1
 Persistence Factor: 0.8
 Analysis Year: 2006

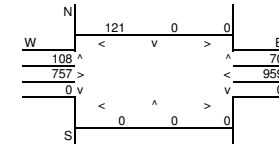
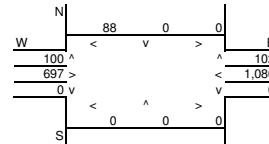
Roadway Data

Intersection: Fourth Street and Parkcenter Drive
 Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Parkcenter Drive	2	15	15
East-West Roadway:	Fourth Street	8	15	15

A.M. Peak Hour Traffic Volumes

P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	290	N-S Road:	299
E-W Road:	1,971	E-W Road:	1,945

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	290	7.55	0.06	0.05	0.04
East-West Road	5.7	4.6	3.4	1,971	7.55	0.85	0.68	0.51
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	299	7.55	0.06	0.05	0.04
East-West Road	5.7	4.6	3.4	1,945	7.55	0.84	0.68	0.50

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.9	6.9	4.8
50 Feet from Roadway Edge	6.7	6.7	4.7
100 Feet from Roadway Edge	6.5	6.5	4.5

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

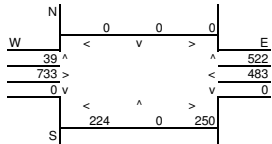
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

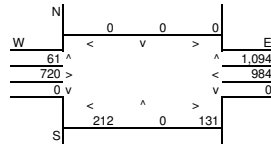
Intersection: Fourth Street and I-5 Northbound Ramps
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	I-5 Northbound Ramps	2	15	15
East-West Roadway:	Fourth Street	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	561	N-S Road:	1,155
E-W Road:	1,988	E-W Road:	2,929

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	561	7.55	0.11	0.09	0.07
East-West Road	5.7	4.6	3.4	1,988	7.55	0.86	0.69	0.51
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,155	7.55	0.24	0.19	0.15
East-West Road	5.7	4.6	3.4	2,929	7.55	1.26	1.02	0.75

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.0	7.5	5.3
50 Feet from Roadway Edge	6.8	7.2	5.1
100 Feet from Roadway Edge	6.6	6.9	4.8

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

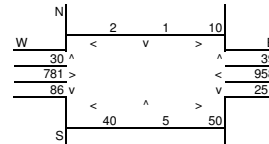
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

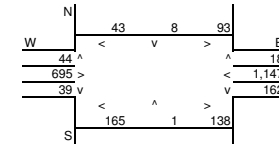
Intersection: Fourth Street and Golden Circle Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Golden Circle Drive	4	15	15
East-West Roadway:	Fourth Street	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	433	N-S Road:	513
E-W Road:	2,089	E-W Road:	2,253

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	433	7.55	0.09	0.07	0.06
East-West Road	5.7	4.6	3.4	2,089	7.55	0.90	0.73	0.54
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	513	7.55	0.10	0.09	0.07
East-West Road	5.7	4.6	3.4	2,253	7.55	0.97	0.78	0.58

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.0	7.1	4.9
50 Feet from Roadway Edge	6.8	6.9	4.8
100 Feet from Roadway Edge	6.6	6.6	4.6

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
 Project Title: Santa Ana MU Overlay

Background Information

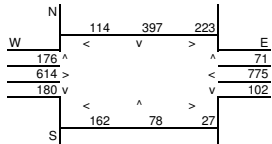
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
 Background 1-hour CO Concentration (ppm): 6.0
 Background 8-hour CO Concentration (ppm): 4.1
 Persistence Factor: 0.8
 Analysis Year: 2006

Roadway Data

Intersection: Fourth Street and Cabrillo Park Drive
 Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Cabrillo Park Drive	At Grade	6	15	15
East-West Roadway:	Fourth Street	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,059	N-S Road:	1,143
E-W Road:	2,021	E-W Road:	2,787

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	A ₁ 25 Feet	A ₂ 50 Feet	A ₃ 100 Feet			B	C	25 Feet
A.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	1,059	7.55	0.18	0.16	0.14
East-West Road	5.7	4.6	3.4	2,021	7.55	0.87	0.70	0.52
P.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	1,143	7.55	0.20	0.17	0.15
East-West Road	5.7	4.6	3.4	2,787	7.55	1.20	0.97	0.72

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
 8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.1	7.4	5.2
50 Feet from Roadway Edge	6.9	7.1	5.0
100 Feet from Roadway Edge	6.7	6.9	4.8

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
 Project Title: Santa Ana MU Overlay

Background Information

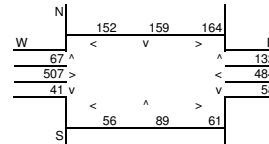
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
 Background 1-hour CO Concentration (ppm): 6.0
 Background 8-hour CO Concentration (ppm): 4.1
 Persistence Factor: 0.8
 Analysis Year: 2006

Roadway Data

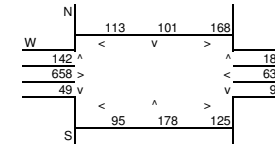
Intersection: First Street and Prospect Avenue
 Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Prospect Avenue	At Grade	6	15	15
East-West Roadway:	First Street	At Grade	6	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	763	N-S Road:	888
E-W Road:	1,406	E-W Road:	1,864

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	A ₁ 25 Feet	A ₂ 50 Feet	A ₃ 100 Feet			B	C	25 Feet
A.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	763	7.55	0.13	0.12	0.10
East-West Road	6.1	4.9	3.5	1,406	7.55	0.65	0.52	0.37
P.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	888	7.55	0.15	0.13	0.11
East-West Road	6.1	4.9	3.5	1,864	7.55	0.86	0.69	0.49

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
 8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.8	7.0	4.9
50 Feet from Roadway Edge	6.6	6.8	4.7
100 Feet from Roadway Edge	6.5	6.6	4.6

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

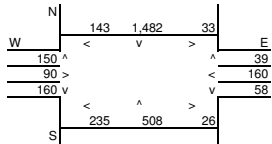
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

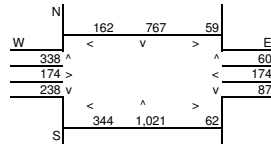
Intersection: First Street and Newport Avenue
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Newport Avenue	At Grade	8	15	15
East-West Roadway:	First Street	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,469	N-S Road:	2,519
E-W Road:	938	E-W Road:	1,430

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	5.7	4.6	3.4	2,469	7.55	1.06	0.86	0.63
East-West Road	2.2	1.9	1.6	938	7.55	0.16	0.13	0.11
P.M. Peak Traffic Hour								
North-South Road	5.7	4.6	3.4	2,519	7.55	1.08	0.88	0.65
East-West Road	2.2	1.9	1.6	1,430	7.55	0.24	0.21	0.17

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.2	7.3	5.1
50 Feet from Roadway Edge	7.0	7.1	5.0
100 Feet from Roadway Edge	6.7	6.8	4.7

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

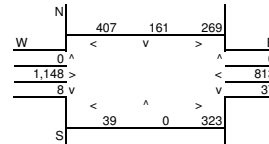
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

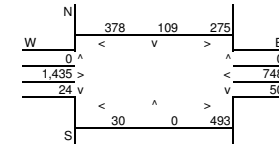
Intersection: First Street and Elk Lane
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Elk Lane	At Grade	6	15	15
East-West Roadway:	First Street	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	837	N-S Road:	762
E-W Road:	2,590	E-W Road:	3,001

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	837	7.55	0.15	0.13	0.11
East-West Road	5.7	4.6	3.4	2,590	7.55	1.12	0.90	0.67
P.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	762	7.55	0.13	0.12	0.10
East-West Road	5.7	4.6	3.4	3,001	7.55	1.29	1.04	0.77

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	7.3	7.4	5.2
50 Feet from Roadway Edge	7.0	7.2	5.0
100 Feet from Roadway Edge	6.8	6.9	4.8

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

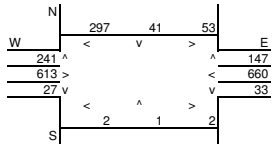
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

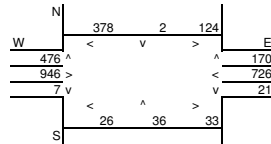
Intersection: First Street and Cabrillo Park Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Cabrillo Park Drive	4	15	15
East-West Roadway:	First Street	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	780	N-S Road:	1,186
E-W Road:	1,840	E-W Road:	2,559

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	780	7.55	0.15	0.13	0.10
East-West Road	5.7	4.6	3.4	1,840	7.55	0.79	0.64	0.47
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,186	7.55	0.23	0.20	0.15
East-West Road	5.7	4.6	3.4	2,559	7.55	1.10	0.89	0.66

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.9	7.3	5.2
50 Feet from Roadway Edge	6.8	7.1	5.0
100 Feet from Roadway Edge	6.6	6.8	4.7

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

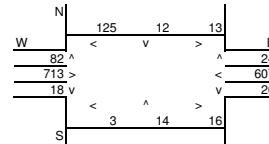
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2006

Roadway Data

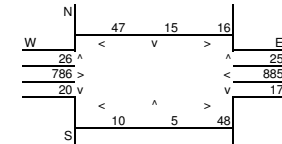
Intersection: First Street and B Street
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	B Street	2	15	15
East-West Roadway:	First Street	6	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	270	N-S Road:	134
E-W Road:	1,548	E-W Road:	1,777

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	270	7.55	0.06	0.04	0.03
East-West Road	6.1	4.9	3.5	1,548	7.55	0.71	0.57	0.41
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	134	7.55	0.03	0.02	0.02
East-West Road	6.1	4.9	3.5	1,777	7.55	0.82	0.66	0.47

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.8	6.8	4.8
50 Feet from Roadway Edge	6.6	6.7	4.6
100 Feet from Roadway Edge	6.4	6.5	4.5

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

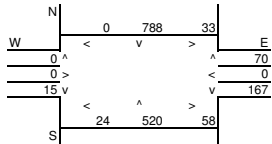
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

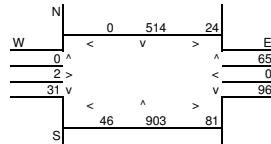
Intersection: Wellington Avenue and Cabrillo Park Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Cabrillo Park Drive	At Grade	6	15	15
East-West Roadway:	Wellington Avenue	At Grade	2	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,572	N-S Road:	1,671
E-W Road:	328	E-W Road:	268

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	1,572	1.23	0.12	0.09	0.07
East-West Road	2.7	2.2	1.7	328	1.23	0.01	0.01	0.01
P.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	1,671	1.23	0.13	0.10	0.07
East-West Road	2.7	2.2	1.7	268	1.23	0.01	0.01	0.01

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
	25 Feet from Roadway Edge	6.1	6.1
50 Feet from Roadway Edge	6.1	6.1	4.2
100 Feet from Roadway Edge	6.1	6.1	4.2

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

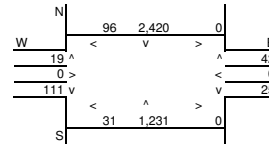
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

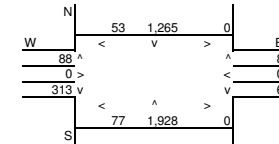
Intersection: Tustin Avenue and Sixth Street
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Tustin Avenue	At Grade	8	15	15
East-West Roadway:	Sixth Street	At Grade	2	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,818	N-S Road:	3,589
E-W Road:	257	E-W Road:	531

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	5.7	4.6	3.4	3,818	1.23	0.27	0.22	0.16
East-West Road	2.7	2.2	1.7	257	1.23	0.01	0.01	0.01
P.M. Peak Traffic Hour								
North-South Road	5.7	4.6	3.4	3,589	1.23	0.25	0.20	0.15
East-West Road	2.7	2.2	1.7	531	1.23	0.02	0.01	0.01

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
	25 Feet from Roadway Edge	6.3	6.3
50 Feet from Roadway Edge	6.2	6.2	4.3
100 Feet from Roadway Edge	6.2	6.2	4.2

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
 Project Title: Santa Ana MU Overlay

Background Information

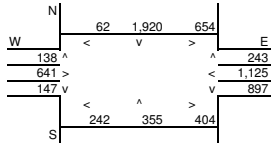
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
 Background 1-hour CO Concentration (ppm): 6.0
 Background 8-hour CO Concentration (ppm): 4.1
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

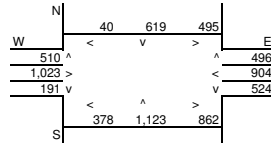
Intersection: Seventeenth Street and Tustin Avenue
 Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Tustin Avenue	8	15	15
East-West Roadway:	Seventeenth Street	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,965	N-S Road:	3,697
E-W Road:	3,964	E-W Road:	4,304

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	5.7	4.6	3.4	3,965	1.23	0.28	0.22	0.17
East-West Road	2.2	1.9	1.6	3,964	1.23	0.11	0.09	0.08
P.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	3,697	1.23	0.10	0.09	0.07
East-West Road	5.7	4.6	3.4	4,304	1.23	0.30	0.24	0.18

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
 8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	6.4	6.4	4.4
50 Feet from Roadway Edge	6.3	6.3	4.4
100 Feet from Roadway Edge	6.2	6.3	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
 Project Title: Santa Ana MU Overlay

Background Information

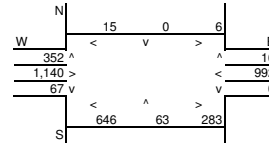
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
 Background 1-hour CO Concentration (ppm): 6.0
 Background 8-hour CO Concentration (ppm): 4.1
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

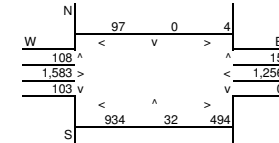
Intersection: Seventeenth Street and SR-55 Northbound Ramps
 Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	SR-55 Northbound Ramps	4	15	15
East-West Roadway:	Seventeenth Street	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,059	N-S Road:	1,563
E-W Road:	3,212	E-W Road:	4,081

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,059	1.23	0.03	0.03	0.02
East-West Road	5.7	4.6	3.4	3,212	1.23	0.23	0.18	0.13
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,563	1.23	0.05	0.04	0.03
East-West Road	5.7	4.6	3.4	4,081	1.23	0.29	0.23	0.17

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
 8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	6.3	6.3	4.4
50 Feet from Roadway Edge	6.2	6.3	4.3
100 Feet from Roadway Edge	6.2	6.2	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

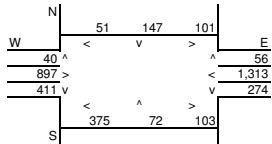
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

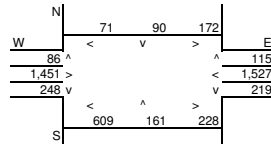
Intersection: Seventeenth Street and Cabrillo Park Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Seventeenth Street	At Grade	6	15	15
East-West Roadway:	Cabrillo Park Drive	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,382	N-S Road:	1,555
E-W Road:	3,087	E-W Road:	3,992

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	1,382	1.23	0.04	0.03	0.03
East-West Road	5.7	4.6	3.4	3,087	1.23	0.22	0.17	0.13
P.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	1,555	1.23	0.04	0.04	0.03
East-West Road	5.7	4.6	3.4	3,992	1.23	0.28	0.23	0.17

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).
² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	6.3	6.3	4.3
50 Feet from Roadway Edge	6.2	6.3	4.3
100 Feet from Roadway Edge	6.2	6.2	4.2

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

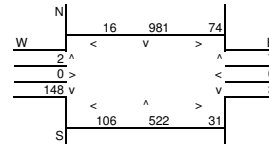
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

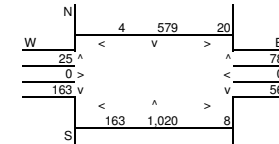
Intersection: Park Court Place and Cabrillo Park Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Cabrillo Park Drive	At Grade	6	15	15
East-West Roadway:	Park Court Place	At Grade	2	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,791	N-S Road:	1,989
E-W Road:	272	E-W Road:	355

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	1,791	1.23	0.13	0.11	0.08
East-West Road	2.7	2.2	1.7	272	1.23	0.01	0.01	0.01
P.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	1,989	1.23	0.15	0.12	0.09
East-West Road	2.7	2.2	1.7	355	1.23	0.01	0.01	0.01

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).
² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	6.1	6.2	4.2
50 Feet from Roadway Edge	6.1	6.1	4.2
100 Feet from Roadway Edge	6.1	6.1	4.2

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

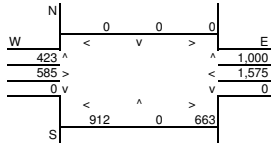
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

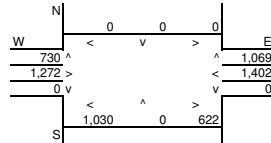
Intersection: Irvine Boulevard and SR-55 Northbound Ramps
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	SR-55 Northbound Ramps	4	15	15
East-West Roadway:	Irvine Boulevard	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,575	N-S Road:	1,799
E-W Road:	3,823	E-W Road:	4,434

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,575	1.23	0.05	0.04	0.03
East-West Road	5.7	4.6	3.4	3,823	1.23	0.27	0.22	0.16
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,799	1.23	0.06	0.05	0.04
East-West Road	5.7	4.6	3.4	4,434	1.23	0.31	0.25	0.19

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.3	6.4	4.4
50 Feet from Roadway Edge	6.3	6.3	4.3
100 Feet from Roadway Edge	6.2	6.2	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

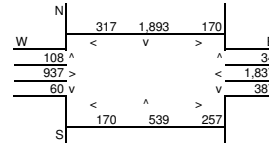
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

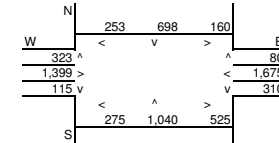
Intersection: Irvine Boulevard and Newport Boulevard
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Newport Boulevard	8	15	15
East-West Roadway:	Irvine Boulevard	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,306	N-S Road:	2,963
E-W Road:	3,622	E-W Road:	4,149

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	3,306	1.23	0.09	0.08	0.07
East-West Road	5.7	4.6	3.4	3,622	1.23	0.25	0.20	0.15
P.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	2,963	1.23	0.08	0.07	0.06
East-West Road	5.7	4.6	3.4	4,149	1.23	0.29	0.23	0.17

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.3	6.4	4.4
50 Feet from Roadway Edge	6.3	6.3	4.3
100 Feet from Roadway Edge	6.2	6.2	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

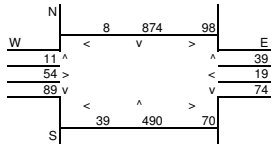
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

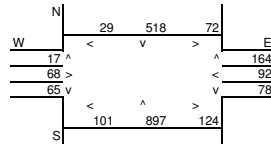
Intersection: Fruit Street and Cabrillo Park Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Cabrillo Park Drive	At Grade	6	15	15
East-West Roadway:	Fruit Street	At Grade	2	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,636	N-S Road:	1,783
E-W Road:	354	E-W Road:	598

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	1,636	1.23	0.12	0.10	0.07
East-West Road	2.7	2.2	1.7	354	1.23	0.01	0.01	0.01
P.M. Peak Traffic Hour								
North-South Road	6.1	4.9	3.5	1,783	1.23	0.13	0.11	0.08
East-West Road	2.7	2.2	1.7	598	1.23	0.02	0.02	0.01

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
	25 Feet from Roadway Edge	6.1	6.2
50 Feet from Roadway Edge	6.1	6.1	4.2
100 Feet from Roadway Edge	6.1	6.1	4.2

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

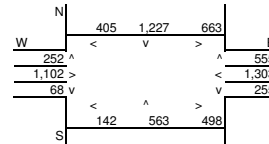
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

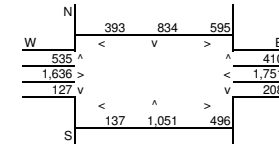
Intersection: Fourth Street and Tustin Avenue
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Tustin Avenue	At Grade	8	15	15
East-West Roadway:	Fourth Street	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,665	N-S Road:	3,818
E-W Road:	4,376	E-W Road:	5,096

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	3,665	1.23	0.10	0.09	0.07
East-West Road	5.7	4.6	3.4	4,376	1.23	0.31	0.25	0.18
P.M. Peak Traffic Hour								
North-South Road	2.2	1.9	1.6	3,818	1.23	0.10	0.09	0.08
East-West Road	5.7	4.6	3.4	5,096	1.23	0.36	0.29	0.21

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
	25 Feet from Roadway Edge	6.4	6.5
50 Feet from Roadway Edge	6.3	6.4	4.4
100 Feet from Roadway Edge	6.3	6.3	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

Intersection: Fourth Street and SR-55 Southbound Ramps
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	SR-55 Southbound Ramps	At Grade	4	15	15
East-West Roadway:	Fourth Street	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,282	N-S Road:	1,967
E-W Road:	4,000	E-W Road:	5,062

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	2,282	1.23	0.07	0.06	0.05
East-West Road	5.7	4.6	3.4	4,000	1.23	0.28	0.23	0.17
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,967	1.23	0.06	0.05	0.04
East-West Road	5.7	4.6	3.4	5,062	1.23	0.35	0.29	0.21

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
	25 Feet from Roadway Edge	6.4	6.4
50 Feet from Roadway Edge	6.3	6.3	4.4
100 Feet from Roadway Edge	6.2	6.3	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

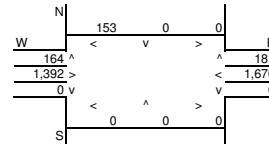
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

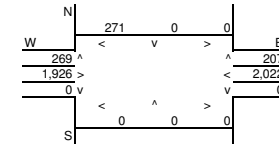
Intersection: Fourth Street and Parkcenter Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Parkcenter Drive	At Grade	2	15	15
East-West Roadway:	Fourth Street	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	498	N-S Road:	747
E-W Road:	3,379	E-W Road:	4,488

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	498	1.23	0.02	0.01	0.01
East-West Road	5.7	4.6	3.4	3,379	1.23	0.24	0.19	0.14
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	747	1.23	0.02	0.02	0.02
East-West Road	5.7	4.6	3.4	4,488	1.23	0.31	0.25	0.19

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
	25 Feet from Roadway Edge	6.3	6.3
50 Feet from Roadway Edge	6.2	6.3	4.3
100 Feet from Roadway Edge	6.2	6.2	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

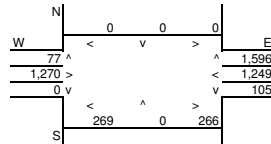
Intersection: Fourth Street and I-5 Northbound Ramps
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	I-5 Northbound Ramps	2	15	15
East-West Roadway:	Fourth Street	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	822	N-S Road:	1,673
E-W Road:	2,794	E-W Road:	4,486

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	822	1.23	0.03	0.02	0.02
East-West Road	5.7	4.6	3.4	2,794	1.23	0.20	0.16	0.12
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	1,673	1.23	0.06	0.05	0.03
East-West Road	5.7	4.6	3.4	4,486	1.23	0.31	0.25	0.19

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.2	6.4	4.4
50 Feet from Roadway Edge	6.2	6.3	4.3
100 Feet from Roadway Edge	6.1	6.2	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

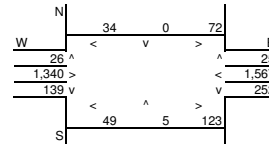
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

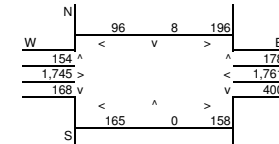
Intersection: Fourth Street and Golden Circle Drive
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Golden Circle Drive	4	15	15
East-West Roadway:	Fourth Street	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	568	N-S Road:	899
E-W Road:	3,379	E-W Road:	4,438

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	568	1.23	0.02	0.02	0.01
East-West Road	5.7	4.6	3.4	3,379	1.23	0.24	0.19	0.14
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	899	1.23	0.03	0.02	0.02
East-West Road	5.7	4.6	3.4	4,438	1.23	0.31	0.25	0.19

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.3	6.3	4.4
50 Feet from Roadway Edge	6.2	6.3	4.3
100 Feet from Roadway Edge	6.2	6.2	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
 Project Title: Santa Ana MU Overlay

Background Information

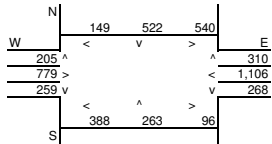
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
 Background 1-hour CO Concentration (ppm): 6.0
 Background 8-hour CO Concentration (ppm): 4.1
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

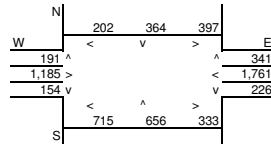
Intersection: Fourth Street and Cabrillo Park Drive
 Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Cabrillo Park Drive	At Grade	6	15	15
East-West Roadway:	Fourth Street	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,989	N-S Road:	2,448
E-W Road:	3,099	E-W Road:	4,243

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	1,989	1.23	0.06	0.05	0.04
East-West Road	5.7	4.6	3.4	3,099	1.23	0.22	0.18	0.13
P.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	2,448	1.23	0.07	0.06	0.05
East-West Road	5.7	4.6	3.4	4,243	1.23	0.30	0.24	0.18

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	6.3	6.4	4.4
50 Feet from Roadway Edge	6.2	6.3	4.3
100 Feet from Roadway Edge	6.2	6.2	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
 Project Title: Santa Ana MU Overlay

Background Information

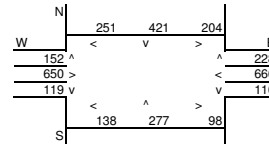
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
 Background 1-hour CO Concentration (ppm): 6.0
 Background 8-hour CO Concentration (ppm): 4.1
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

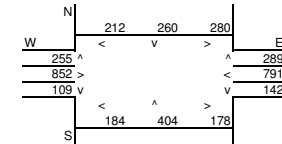
Intersection: First Street and Prospect Avenue
 Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Prospect Avenue	At Grade	6	15	15
East-West Roadway:	First Street	At Grade	6	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,533	N-S Road:	1,700
E-W Road:	1,976	E-W Road:	2,532

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	1,533	1.23	0.04	0.04	0.03
East-West Road	6.1	4.9	3.5	1,976	1.23	0.15	0.12	0.09
P.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	1,700	1.23	0.05	0.04	0.04
East-West Road	6.1	4.9	3.5	2,532	1.23	0.19	0.15	0.11

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
25 Feet from Roadway Edge	6.2	6.2	4.3
50 Feet from Roadway Edge	6.2	6.2	4.2
100 Feet from Roadway Edge	6.1	6.1	4.2

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

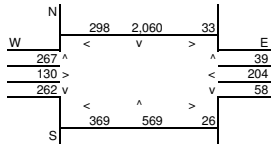
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

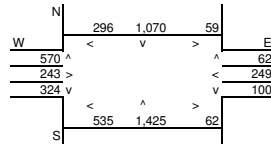
Intersection: First Street and Newport Avenue
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Newport Avenue	At Grade	8	15	15
East-West Roadway:	First Street	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,344	N-S Road:	3,516
E-W Road:	1,530	E-W Road:	2,217

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	5.7	4.6	3.4	3,344	1.23	0.23	0.19	0.14
East-West Road	2.2	1.9	1.6	1,530	1.23	0.04	0.04	0.03
P.M. Peak Traffic Hour								
North-South Road	5.7	4.6	3.4	3,516	1.23	0.25	0.20	0.15
East-West Road	2.2	1.9	1.6	2,217	1.23	0.06	0.05	0.04

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.3	6.3	4.3
50 Feet from Roadway Edge	6.2	6.3	4.3
100 Feet from Roadway Edge	6.2	6.2	4.2

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
Project Title: Santa Ana MU Overlay

Background Information

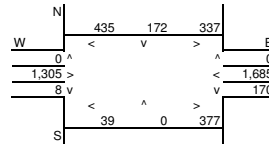
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
Background 1-hour CO Concentration (ppm): 6.0
Background 8-hour CO Concentration (ppm): 4.1
Persistence Factor: 0.8
Analysis Year: 2030

Roadway Data

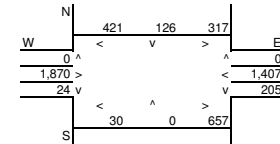
Intersection: First Street and Elk Lane
Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed		
			A.M.	P.M.	
North-South Roadway:	Elk Lane	At Grade	6	15	15
East-West Roadway:	First Street	At Grade	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	944	N-S Road:	1,042
E-W Road:	3,874	E-W Road:	4,456

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	944	1.23	0.03	0.02	0.02
East-West Road	5.7	4.6	3.4	3,874	1.23	0.27	0.22	0.16
P.M. Peak Traffic Hour								
North-South Road	2.3	2.0	1.7	1,042	1.23	0.03	0.03	0.02
East-West Road	5.7	4.6	3.4	4,456	1.23	0.31	0.25	0.19

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.3	6.3	4.4
50 Feet from Roadway Edge	6.2	6.3	4.3
100 Feet from Roadway Edge	6.2	6.2	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
 Project Title: Santa Ana MU Overlay

Background Information

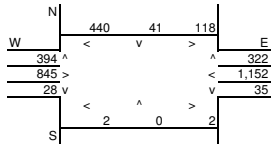
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
 Background 1-hour CO Concentration (ppm): 6.0
 Background 8-hour CO Concentration (ppm): 4.1
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

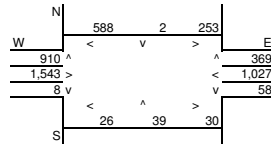
Intersection: First Street and Cabrillo Park Drive
 Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Cabrillo Park Drive	4	15	15
East-West Roadway:	First Street	8	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,315	N-S Road:	2,161
E-W Road:	2,861	E-W Road:	4,102

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	1,315	1.23	0.04	0.04	0.03
East-West Road	5.7	4.6	3.4	2,861	1.23	0.20	0.16	0.12
P.M. Peak Traffic Hour								
North-South Road	2.6	2.2	1.7	2,161	1.23	0.07	0.06	0.05
East-West Road	5.7	4.6	3.4	4,102	1.23	0.29	0.23	0.17

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.2	6.4	4.4
50 Feet from Roadway Edge	6.2	6.3	4.3
100 Feet from Roadway Edge	6.1	6.2	4.3

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: D20950.01
 Project Title: Santa Ana MU Overlay

Background Information

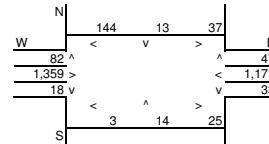
Nearest Air Monitoring Station measuring CO: Anaheim-Pampas Lane
 Background 1-hour CO Concentration (ppm): 6.0
 Background 8-hour CO Concentration (ppm): 4.1
 Persistence Factor: 0.8
 Analysis Year: 2030

Roadway Data

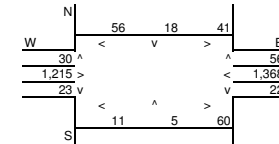
Intersection: First Street and B Street
 Analysis Condition: Existing Conditions

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	B Street	2	15	15
East-West Roadway:	First Street	6	15	15

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	337	N-S Road:	206
E-W Road:	2,777	E-W Road:	2,762

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	Reference CO Concentrations			Traffic Volume	Emission Factors ²	Estimated CO Concentrations		
	25 Feet	50 Feet	100 Feet			25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	337	1.23	0.01	0.01	0.01
East-West Road	6.1	4.9	3.5	2,777	1.23	0.21	0.17	0.12
P.M. Peak Traffic Hour								
North-South Road	2.7	2.2	1.7	206	1.23	0.01	0.01	0.00
East-West Road	6.1	4.9	3.5	2,762	1.23	0.21	0.17	0.12

¹ Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).

² Emission factors from EMFAC2002 (2003).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M.	P.M.	8-Hour
	Peak Hour	Peak Hour	
25 Feet from Roadway Edge	6.2	6.2	4.3
50 Feet from Roadway Edge	6.2	6.2	4.2
100 Feet from Roadway Edge	6.1	6.1	4.2

² Methodology from Bay Area Air Quality Management District BAAQMD CEQA Guidelines (1996).